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EXAMINER

WEST, JEFFREY R

ART UNIT PAPER NUMBER

2857

DATE MAILED: 05/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/682,030

Applicant(s)

STARK ET AL.

Examiner

Jeffrey R. West

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 06 February 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-6, 11, 14, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,817,958 to Uchida et al. in view of U.S. Patent Application Publication No. 2001/0056335-A1 to Ikeda et al. and U.S. Patent No. 4,998,208 to Buhrow et al.

Uchida discloses an automatic plant monitoring and diagnosing method/system as well as a plant equipped with the system, wherein the plant is a boiling water or pressurized water nuclear reactor plant (column 1, lines 12-18), and the system further comprises a first input means for receiving detection data of plant operating conditions, apparatus operating conditions, such as jet pump (column 1, lines 50-51) and core spray (column 2, lines 16-18) conditions, and environmental conditions, a second input means for receiving plant inspection data, a first input data processing means for preparing data for use in plant monitoring and diagnosis based on the detection data from the first input means, a second input data processing means for preparing data for use in plant monitoring and diagnosis based on the inspection data from the second input means, and a plant chart (i.e. database) for storing the

data prepared by the first and second input data processing means (i.e. cross-referencing the operating data and the inspection data) along with past/historical inspection data/results (column 3, lines 14-20 and 35-46) for use in the plant monitoring and diagnosis (column 4, lines 18-31).

Uchida also discloses that the operating conditions of each apparatus in the plant is detected by their respective detection means and is accumulated, and updated (column 6, lines 22-23), in the appropriate storage means continuously through an on-line monitor (column 6, lines 7-12) and that the collected apparatus data and inspection data are sent to a central control room where they are combined (column 7, lines 18-25) and displayed to allow a user to inquire about the condition of a particular apparatus or location wherein the automated system then calculates the residual life evaluation, for presentation to the user, along with the apparatus/member name, apparatus description, and the material name (column 16, lines 19-40, column 19, lines 9-18, and Figure 17A). Uchida also discloses inputting inspection data including material names as well as engineering conditions, such as the conditions of welds (column 13, lines 48-60).

Although Uchida does disclose sending data to a central location, Uchida does not teach the corresponding method or system for performing this function. Uchida also doesn't specifically disclose modifying the next required inspection of each plant component based upon inspection result information.

Ikeda teaches a remote monitoring diagnostics system and method for providing centralized remote monitoring of multiple power plants (0002) comprising collecting

and storing, to a centralized database, operating plant data, the database also containing past plant data associated with errors having occurred to the plant and actions taken to cope with the errors, and analyzing the plant data according to the database in order to send a report to the user of the plant regarding the causes for, or action to cope with, the error in the plant (0006). Ikeda teaches that a field monitoring/client system collecting plant data from the controller of the power plant transmits the plant data, for downloading, to a remote monitoring center over a public phone line, or an Internet connection (0017), in response to a request for information (0020), and sending information, for downloading, from the remote monitoring center to the field monitoring/client system (0031). Ikeda also teaches that, upon the occurrence of an error and in response to a request to search the database for relevant error information (0064), the local field monitoring system retrieves the requested information and provides a report to be downloaded by the maintenance engineer wherein the report contains data indicating when the error occurred, the name of the plant where the error occurred, and the contents of the error (0024). Ikeda also teaches communicating and connecting, over a server, the remote monitoring center to the field monitoring/client center through a Firewall (0031 and 0035).

Buhrow discloses a piping corrosion monitoring system for calculating risk-level safety factors and producing an inspection schedule for a plant (column 1, lines 16-20) comprising a computer program that measures data specific to a component (i.e. corrosion rate of a pipe) during an inspection and uses the inspection result to

update/modify the required inspection data (column 6, lines 20-33, column 7, lines 22-27). Buhrow also teaches storing historical inspection records (column 7, line 63 to column 8, line 3) in to effect the updated inspection requirements (column 12, lines 12-24). Buhrow further teaches using inspection results to insure that the inspection schedule is updated to meet required safety standards (column 13, line 67 to column 14, line 7).

It would have been obvious to one having ordinary skill in the art to modify the invention of Uchida to include a corresponding method and system for sending data to a central location, as taught by Ikeda, because, as suggested by Ikeda, the combination would have provided a method for monitoring a plurality of plants from one location with clear results presented to skilled maintenance workers to significantly reduce the time and effort required to solve any pending problems (0003-0004) as well as prevented a third party from accessing the plant data (0035).

It would have been obvious to one having ordinary skill in the art to modify the invention of Uchida to include modifying the next required inspection of each plant component based upon inspection result information, as taught by Buhrow, because Buhrow suggests that the combination would have allowed the current inspection requirements to be updated with respect to inspection results specific to each individual monitored component of the plant (column 1, line 55 to column 2, line 30). In this way the system will optimize required manpower and meet safety requirements by making a distinction between components that degrade quickly, and

require frequent inspection, and components that do not degrade quickly, requiring sporadic inspection.

Further, although the invention of Uchida, Ikeda, and Buhrow doesn't specifically disclose configuring the server system to delete information or that the monitoring system include a program and associated code segments stored on a computer readable medium, it would have been obvious to one having ordinary skill in the art to include deleting information because the combination would have allowed further data management, allowed the user to correct mistakes by removing data incorrectly entered, and would have performed a step, taught by Uchida and Ikeda, functionally equivalent to continuously updating information. Also, it is considered inherent that in order for the monitoring device to perform the aforementioned computer-implemented method, the computers must contain a programmed code containing necessary associated code-segments.

3. Claims 2, 7-9, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. in view of Ikeda et al. and Buhrow and further in view of U.S. Patent No. 4,642,215 to Klinvex et al.

As noted above, the invention of Uchida, Ikeda, and Buhrow teaches many of the features of the claimed invention including cross-referencing component data with inspection results and operation data for reactor welds, but does not teach a method for obtaining the weld data (i.e. ultrasonic testing) or specifically teach that the data

correspond to inspection regulations or recommendations for the specific components (i.e. welds).

Klinvex teaches a universal tool for ultrasonic testing of nuclear reactor tubular objects such as vessels and their components parts, for locating various defects such as cracks and voids in the various weld volumes while being independent of the reactor vessel size and meeting future government regulations mandated for such testing (column 3, lines 1-8).

It would have been obvious to one having ordinary skill in the art to modify the invention of Uchida, Ikeda, and Buhrow to include a method for performing the weld inspection and specifying that the data correspond to inspection regulations or recommendations, as taught by Klinvex, because the combination would have provided the means necessary to test the reactor welds, taught by Uchida, and further, as suggested by Klinvex, by cross-referencing the component data against inspection regulations the combination would have provided a method for determining, not only whether the components meet inspection criteria set by the plant operator, but also whether the components meet the inspection regulations required by law (column 1, lines 39-57 and column 4, line 64 to column 5, line 9).

4. Claims 12, 13, 18-20, 22 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. in view of Ikeda et al. and Buhrow and further in view of U.S. Patent Application Publication No. 2002/0123864-A1 to Eryurek et al.



As noted above, the invention of Uchida and Ikeda teaches many of the features of the claimed invention including monitoring a plurality of plants from one central location, but does not specifically disclose a manner in which to present the information to the user.

Eryurek teaches remote analysis of process control plant data comprising monitoring component operation and transmitting the data over a bus, wireless communication system, or network connection running a XML protocol server (0053-0055) to a remote site that runs and oversees the operation of the power generating and distribution equipment (0050-0051) and produces a corresponding report to a user/client system using an Internet browser (0157) that allows the selection/entering of individual component and plant data options through a corresponding display including user-friendly menus, such as pull-down menus that filter the data and display the stored data by component/criteria selection as requested by the user (Figures 20, 27, and 37-41).

It would have been obvious to one having ordinary skill in the art to modify the invention of Uchida, Ikeda, and Buhrow to include a specific manner in which to present the information to the user, as taught by Eryurek, because, as suggested by Eryurek, the combination would have provided a method for conveniently displaying results of diagnosis of many different aspects of plant operation to one location for easy monitoring and control by an operator and therefore eliminated the need for more physical user interaction (0006, 0010, and 0014).

Further, Applicant fails to provide the criticality of the claimed feature of submitting a request through pull-down lists. Therefore this aspect is considered an engineering design choice and, since the invention of Uchida, Ikeda, and Buhrow teaches a functionally equivalent method for receiving inquiries, this feature is not considered patentable over the prior art.

5. Claims 21, 23, and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. in view of Ikeda et al., Buhrow, and Eryurek et al. and further in view of U.S. Patent No. 4,642,215 to Klinvex et al.

As noted above, Uchida in combination with Ikeda, Buhrow, and Eryurek teaches many of the features of the claimed invention including cross-referencing component data with inspection results and operation data for reactor welds, but does not teach a method for obtaining the weld data (i.e. ultrasonic testing) or specifically teach that the data correspond to inspection regulations or recommendations for the specific components (i.e. welds).

Klinvex teaches a universal tool for ultrasonic testing of nuclear reactor tubular objects such as vessels and their components parts, for locating various defects such as cracks and voids in the various weld volumes while being independent of the reactor vessel size and meeting government regulations mandated for such testing (column 3, lines 1-8).

It would have been obvious to one having ordinary skill in the art to modify the invention of Uchida, Ikeda, Buhrow, and Eryurek to include a method for performing

the weld inspection and specifying that the data correspond to inspection regulations or recommendations, as taught by Klinvex, because the combination would have provided the means necessary to test the reactor welds, taught by Uchida, and further, as suggested by Klinvex, by cross-referencing the component data against inspection regulations the combination would have provided a method for determining, not only whether the components meet inspection criteria set by the plant operator, but also whether the components meet the inspection regulations required by law (column 1, lines 39-57 and column 4, line 64 to column 5, line 9).

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-31 have been considered but are moot in view of the new ground(s) of rejection.

It is noted, however, that Applicant argues the combination of Uchida and Ikeda because "Uchida is directed to a monitoring and diagnosing method and system for a single plant. There is no indication, in Uchida, of the need to monitor more than one plant at a time or that the desired method and system is capable of monitoring and diagnosing more than one plant at a time. Applicants submit that the motivation to combine the cited art came from Applicants own application." The Examiner maintains that while obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art,

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the required motivation does not necessarily need to come from the primary reference itself. The Examiner asserts that motivation exists because the combination would have allowed monitoring data from the plant to be sent to a remote location for presenting clear results to skilled maintenance workers therefore significantly reducing the time and effort required to solve any pending problems (0003-0004).

Further, in response to Applicant's argument that the Examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant also argues that the combination of Uchida, Ikeda, and Klinvex because "Klinvex does not describe nor suggest any method for performing weld inspections" and "Uchida and Ikeda are not limited to the monitoring of weld integrity and there is no shown motivation to combine the teachings of Klinvex with the teachings of Uchida and Ikeda." The Examiner asserts that since the invention of Uchida and Ikeda teaches a monitoring system including cross-referencing component data with inspection results and operation data for reactor welds (Uchida et al., column 13, lines 48-60) but does not teach a method for obtaining the weld

data (i.e. ultrasonic testing) or specifically teach that the data correspond to inspection regulations or recommendations for the specific components (i.e. welds) it would have been obvious to one having ordinary skill in the art to include these features, as taught by Klinvex, because the combination would have provided the means necessary to test the reactor welds of Uchida and Ikeda, and further, as suggested by Klinvex, by cross-referencing the component data against inspection regulations the combination would have provided a method for determining, not only whether the components meet inspection criteria set by the plant operator, but also whether the components meet the inspection regulations required by law (column 1, lines 39-57 and column 4, line 64 to column 5, line 9).

While the rejection of claims 10 and 28-31 under 35 U.S.C. 103(a) as being unpatentable over Uchida et al. in view of Ikeda et al. and Klinvex et al. and further in view of JP Patent No. 11-345019 to Uchida et al. (henceforth referred to as 'JP-Uchida') is moot due to the new limitations requiring a determination of the next required inspection of each plant component, the Examiner maintains that JP-Uchida does teach generating inspection requirements based on inspection results since JP-Uchida teaches performing inspection to obtain failing results and based upon these failing results creating an operating ratio to create/modify the inspection schedule.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to

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applicant's disclosure:

U.S. Patent No. 5,657,245 to Hecht et al. teaches a component maintenance system for a nuclear power plant wherein the history of inspection results may be evaluated in an effort to specify next required inspections.

U.S. Patent Application Publication No. 2002/0029222 to Key teaches a system and method for an online jurisdiction manager of a power plant that uses physical inspection results to determine when the next inspection should be scheduled.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the

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examiner should be directed to Jeffrey R. West whose telephone number is (703)308-1309. The examiner can normally be reached on Monday through Friday, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc S. Hoff can be reached on (703)308-1677. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7382 for regular communications and (703)308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

jrw  
April 29, 2003

  
MARC S. HOFF  
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